

Application Serial No. 10/539,731
Reply to office action of December 26, 2007

PATENT
Docket: CU-4274

REMARKS/ARGUMENTS

Reconsideration is respectfully requested.

Claims 1-7 are pending before this amendment. By the present amendment, claims 1 and 5-7 are amended, and new claims 8-9 are added. No new matter has been added.

In the office action (page 2), claims 1-7 stand rejected under 35 U.S.C. § 101 on grounds that the claimed invention is directed to an abstract idea.

The applicants have subsequently amended the preambles of all of the independent base claims 1 and 5-6 to explicitly recite --converting user data into IP packets and converting IP packets into user data--.

Further regarding independent claim 1 with respect to this 35 U.S.C. § 101 rejection, the applicants have also subsequently amended claim 1 so that it now more clearly requires that the --virtual driver provided on the lower part of the IP layer performing routing of IP packets back and forth to the PDN via the IP layer--. Claim 1 has also been amended to include the limitations of --a GPRS tunneling protocol unit (GTP-U) converting back and forth the IP packets into tunnel messages using a GPRS tunneling protocol --. Therefore, the applicant respectfully submits that independent claim 1 and its dependent claims (2-5) possess the utility of converting user data into IP packets and converting IP packets into user data.

Further regarding independent claim 5 with respect to this 35 U.S.C. § 101 rejection, the applicants have also subsequently amended claim 5 so that the GGSN from a GPRS network receives a first data unit from a GPRS network and that the transfer layer generates a first IP packet from the first tunneled message so that the first

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IP packet is then -- a *first IP packet from the first tunneled message to be directed to a virtual driver is generated* --so as to be directed to a virtual driver which routes the first IP packet to the IP layer. Therefore, the applicant respectfully submits that independent claim 5 and its dependent claim (new claim 8) also possess the utility of converting user data into IP packets and converting IP packets into user data.

Further regarding independent claim 6 with respect to this 35 U.S.C. § 101 rejection, the applicants have also subsequently amended the limitation in claim 6 so that it now requires that -- *the tunneled message is converted into user data through the transfer layer, the IP layer, and the protocols of the first and second layers*--. Therefore, the applicant submits that independent claim 6 and its dependent claim (new claim 9) possess the utility of converting user data into IP packets and converting IP packets into user data.

Therefore, the applicants respectfully submit that the basis for these non-utility rejections of claims 1-7 has been removed because of the utility of being able to interchange user data and IP packets with each other. Accordingly the examiner is respectfully requested to withdraw this rejection.

Claims 1-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2003/0002480 (Giustina et al.), in view of U.S. Patent Publication No. 2004/0141393 (Eriksson et al.).

For the reasons presented below, the applicant respectfully traverse this obviousness rejection of claims 1-7, and submit that these claims, as they now stand, are in allowable form.

In particular, the applicants respectfully traverse this obviousness rejection to

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claims 1-7 because a *prima facie* case of obviousness has not been adequately established. Furthermore, the respective independent claims (i.e., claims 1, 5 and 6) have been subsequently amended to add more clarity to the presently claimed subject matter which more clearly defines and thus distinguishes the presently claimed subject matter away from the teachings and suggestions of the cited references, i.e., Giustina and Eriksson.

That is, the applicant respectfully submits that Giustina and Eriksson, in whole or in combination, do not teach or suggest the bi-directional virtual driver of the presently claimed invention. That is the present invention provides a system having an advantage as if two IP layers operate in the system, even though the system manages an IP layer. Therefore, the complexity of the system of the present invention provides the inherent advantage of realizing a reduction in complexity. In contrast, the cited references disclose protocol constructions that manage a plurality of IP layers, thereby systems based on the cited references necessarily increase in complexity.

First, the applicants agree with the examiner admission that Giustina does not disclose a virtual driver (See Office Action page 5, line 4; page 6, line 4; page 6, line 20; page 7, line 16; and page 8, line 14).

Second, the Giustina reference concerns itself not with virtual drivers but rather concerns itself with how to track each individual Mobile Station (MS).

In particular, Giustina discloses a mobile telecommunication system that provides packet switching services for connecting mobile stations (MS) to an external data network (PDN) which uses a gateway control means (GGSN) for receiving packet data units (PDU) from the external data network for routing to selected MS having unique

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IMSI numbers for use in establishing connections with the GGSN (See Giustina ¶[0015], lines 1-7). The Giustina system does this by using a table for tracking each MS and its associate packet addresses with the MS for a selected packet data services. This table is used to contain the system address to each packet address associated with each MS along with contents of access point identifier employed in the system for the external data network. This table is used to store, among other things, the SGSN (Serving GPRS Support Node) address associated with each MS and a time index so as to judge whether or not the SGSN address is valid or time expired. Preferably this table also stores the access point name (APN) which then can be used as a reference point or identifying address for the external network. In the event that this table does not have a valid SGSN address, the GGSN interrogates the HLR (Home Location Register) to obtain the respective information. (See Giustina ¶[0014], lines 1-6).

Therefore, the applicants respectfully confirms that Giustina is silent with regards to a virtual driver and in fact Giustina is concerned primarily with how to track each individual MS so that the associate packet addresses with the MS for a selected packet data services may be correctly and efficiently delivered to that individual MS instead of how to interface user data and IP packets between GPRS and PDN via the IP layer.

Third, the unidirectional IP virtual drivers of Eriksson are unlike that of the bi-directional virtual driver of the presently claimed invention.

Eriksson is concerned with techniques/strategies on how to exploit concurrent usage of communication paths in a multi-path access link to the IP networks where access to the communication network can be obtained via a plurality of bearers (e.g., UMTS, Bluetooth, etc.), in which each bearer is expected to have different transport

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service requirements depending on the properties of the available access technologies and have different behavioral requirements of the individual packet flows (Eriksson ¶[0032], lines 12-17).

Eriksson does this by using a Simultaneous Multiple Access (SIMAC) that creates a uni-directional 'virtual' IP bearers spanning several transport (access) technologies (Eriksson ¶[0034], lines 1-3). A key part of SIMAC is that it uses a link manager 52 that makes flow mapping decisions by deciding how the available access bearers should be used for uplink traffic and/or downlink traffic, as well as, deciding what type of transport channel is to be used for a particular bearer (Eriksson ¶[0061], lines 1-20). Part of this link manager 52 is a forwarding engine 61 that maps uplink and downlink traffic relative to appropriate transport channels according to a forwarding table defined by the link manager 52 (Eriksson ¶[0066], lines 5-8). The forwarding engine 61 can optionally utilize IP tunneling by adding tunneling IP headers in downlinks towards various terminals (Eriksson ¶[0067]). Of note is when there is a hop between two user terminals, i.e., there are at least two alternative paths for traversing the hop, then Eriksson discloses that the forwarding engine 61 is used to map the flows onto the different bearers on each alternate path which requires forwarding functions on each side of the link (Eriksson ¶[0045]).

In Fig. 18 of Eriksson, the IP module and the device driver are clearly shown to forward packets onto individual bearers via a link interface. Then the outgoing IP packets are returned from the IP module to the L4FE where a flow classification identifies the flow to which the packets belong (Eriksson ¶[0085]). This is in contrast to the bi-directional virtual driver of the present invention, which sends and receives IP

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Accordingly, the applicants respectfully request reconsideration and withdrawal of the outstanding rejections and earnestly solicit an indication of allowable subject matter.

This amendment is considered to be responsive to all points raised in the office action. Should the examiner have any remaining questions or concerns, the examiner is encouraged to contact the undersigned attorney by telephone to expeditiously resolve such concerns.

Respectfully submitted,

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packets back and forth from the PDN via the IP layer.

Therefore, the unidirectional 'virtual' IP bearers of Eriksson are unlike that of the bi-directional virtual driver of the presently claimed invention.

As per MPEP §2143.03, the combined prior art references must teach or suggest all of the claim limitations to render an invention obvious.

Since Giustina and Eriksson, in whole or in combination, do not teach or suggest, inter alia, the virtual driver of the present invention that sends and receives IP packets back and forth from the PDN via the IP layer, then Giustina in view of Eriksson cannot support an obviousness rejection to the independent claims 1, 5 and 6 of the present invention. The applicants therefore respectfully submit that independent claims 1, 5 and 6, as they now currently stand, are in allowable form. Accordingly, the examiner is respectfully requested to withdraw this obviousness rejection to independent claims 1, 5 and 6.

Claims 2-4 and 7 and new claims 8 and 9 depend from independent claims 1, 5 and 6 and thus incorporate by reference all the limitations contained therein, including the limitation that the virtual driver which sends and receives IP packets back and forth from the PDN via the IP layer, which has already been shown to be absent from Giustina and Eriksson. Accordingly, claims 2-4 and 7 and new claims 8 and 9 are also believed to be allowable as being dependent upon allowable base claims. Accordingly, the examiner is respectfully requested to withdraw this obviousness rejection to dependent claims 2-4 and 7.

For the reasons set forth above, the applicants respectfully submit that claims 1-9, now pending in this application, are in condition for allowance over the cited references.